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Is the Window of Opportunity Closing for Brazilian Youth? Labor Market Trends and Business Cycle Effects

Michael Justesen

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Michael Justesen

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Abstract

Brazilian youth today face enormous difficulties in penetrating the labor market, a situation much different from the one 25 years ago. While females have entered the labor market and increased their employment rate many are unemployed. Youth unemployment reached 19.1 percent in 2002; up from 4.5 percent in 1978. This paper analyzes long-run trends, as well as the impact of business cycles, on Brazilian youth in the labor market. To do this, the paper uses Brazilian household data (PNAD) spanning 1978−2002 and covering 290,000−530,000 individuals per year. Two main findings are presented: First, the labor market situation for youth has deteriorated and did especially so in the 1990s. In particular, labor force participation and employment have been decreasing relatively more for youth than for adults, but also wages decreased and unemployment increased for youth. Second, Brazilian youth were adversely impacted by business cycle fluctuations. During recessions youth lost ground compared to adults in the labor market in terms of labor force participation, employment, and to some extent unemployment. During expansions youth did not catch up on adults; in fact, the gap continued to widen.

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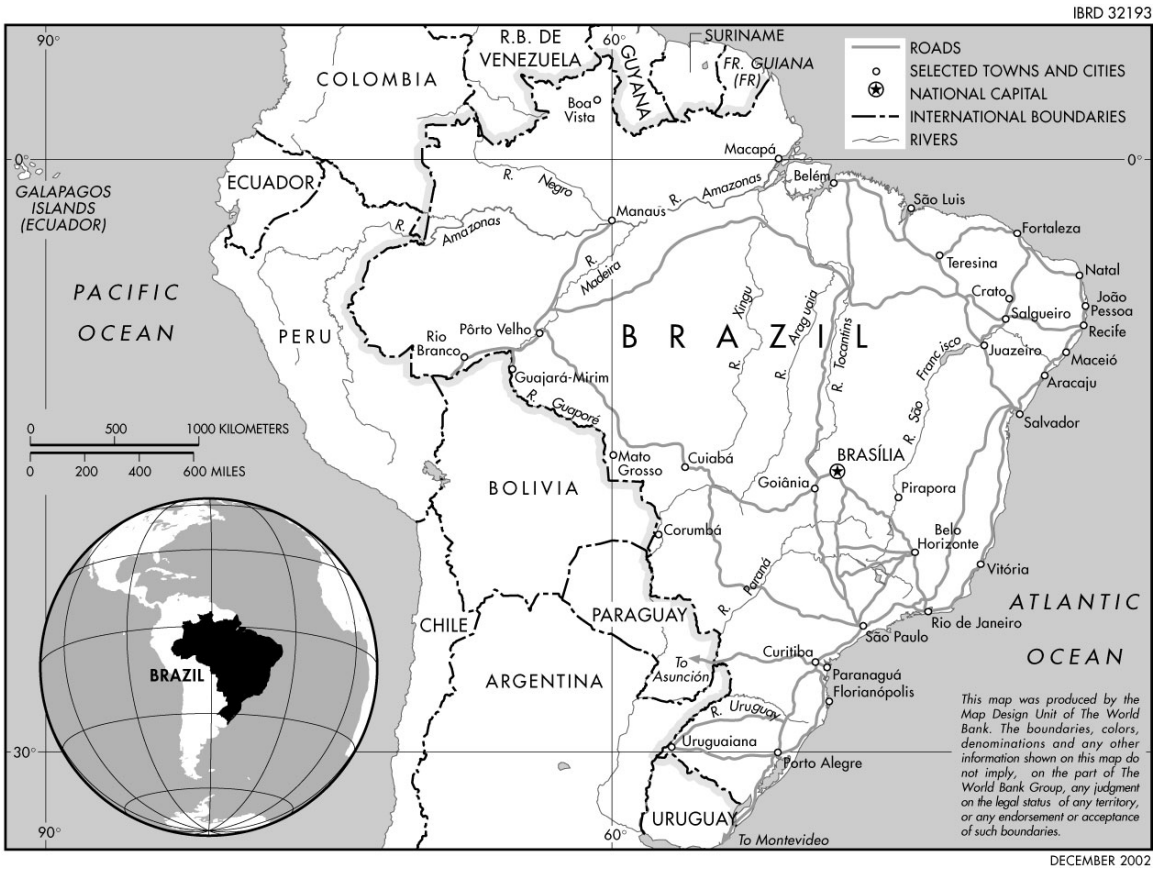

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Keywords: Youth, long-run trends, business cycle fluctuations, labor market indicators, labor force participation, employment, unemployment, wages, Brazil.

Introduction

The Brazilian labor market experienced severe business cycle fluctuations over the 25 years covered here (1978−2002), and over the same time period the situation for Brazilian youth (age 15−24) deteriorated. Trade liberalization, political turmoil, hyperinflation, and exchange rate fluctuations had serious repercussions on the labor market. In 2002, the Brazilian labor force consisted of about 81 million workers (age 15−64); around two thirds of a population of 179 million people. The total unemployment rate was around 10 percent, meaning that some 8 million were unemployed.[2] For youth in the labor market the situation worsened; employment dropped, unemployment increased, and wages fell.

Youth have become more and more important for the Brazilian labor market in recent decades because of their increase in size; in 2004 more than 19 percent of all Brazilians were between 15 and 24 years old, i.e., over 35 million people. The size of the Brazilian youth cohorts is currently peaking.[3] In the 1950s, crude birth rates were already falling in Brazil, but death rates fell faster, creating annual population growth rate of 3 percent between 1960 and 1965 (Lam 2006).[4] As the cohorts of the 1950s and 1960s reached childbearing age, births peaked around 1982. This large cohort is about to enter the labor market, and its size may put pressure on wages, employment, and growth. At the same time, the youth bulge is also a window of opportunity resulting from a potentially favorable ratio of working age population to the dependent population once the surge has stopped and youth move into adulthood. For example, the rise in the proportion of working population to non-working population in East Asia after the youth bulge played an important role in the economic miracle in the region (ibid.). However, Brazilian youth have not had sufficient access to education, health services, and other measures that facilitate an easy transition into the labor market. In fact, the Brazilian labor market situation is worse for youth than the general overview suggests. With an unemployment rate of 19.1 percent in 2002, Brazilian youth were at a disadvantage in entering the labor market, and thereby to develop their skills and gain experience.

This paper analyzes long-run trends in the Brazilian labor market as well as the impact of business cycles on youth compared to adults (25−49 years). Thus, by use of Brazilian household data (PNAD) spanning 1978−2002 and covering 290,000−530,000 individuals per year the paper provides new research on Brazilian youth in the labor market in at least two ways: i) It provides a detailed overview of the main labor market indicators' trends and evolution over a quarter of a century, and ii) it analyzes the effects of business cycle fluctuations on youth compared to adults in the labor market. It differs from previous studies by analyzing four labor market indicators over a long time span and within business cycles with direct focus on youth. The four indicators are: Labor force participation, employment, unemployment, and hourly real wages.

[2] Own calculations based on World Development Indicators (*WDI*) and Brazilian household data (*PNAD*).
[3] The actual peak is estimated at year 2024, but because of a projected negative average growth rate, Lam (2006) categorizes Brazilian youth (12─24 years) as effectively peaking in size between 2000 and 2010.
[4] The crude birth rate is the number of births per year divided by the total mid-year population, expressed as a ratio of births per 1000 population. The crude death rate is deaths per year per 1000 population.

The main findings of the paper show that the labor market situation for Brazilian youth has deteriorated, and that business cycles have adversely affected youth. First, the labor market situation for youth is found to have deteriorated significantly between 1978 and 2002 both in levels and compared to adults. In the 1980s, the labor market situation slowly worsened, but in the 1990s the labor market deteriorated in terms of most labor market indicators, especially for youth. While females are not at par with males in the labor market, they have generally been catching up over the years. However, especially young females have experienced an increasing unemployment rate, because the labor market did not fully absorb the increased participation or had the sufficient wage flexibility. Second, while the long-run trends appear to have played the key role for youth, youth are also found to be adversely affected by business cycle fluctuations. While youth tend to suffer more in recessions, they do not catch up on adults during expansions.

The paper consists of five sections. Section 1 describes major changes in the Brazilian economy during the 25 years covered, as well as a brief literature review. Section 2 describes the data, and identifies the main labor market indicators. Using these indicators, Section 3 analyzes long-run trends in the labor market. In contrast, Section 4 identifies five business cycles, and analyzes the differences in impact between youth and adults within these periods. Finally, Section 5 concludes the paper.

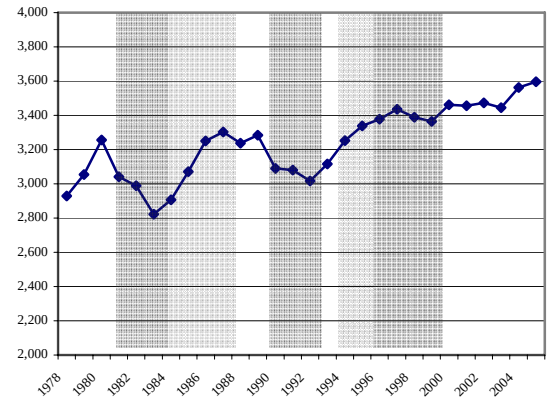
1. The Brazilian Labor Market

The Brazilian labor market displays macroeconomic flexibility and microeconomic rigidity. The Brazilian labor market is generally characterized by macroeconomic flexibility, because of pragmatic labor unions, its–until recently– relatively low unemployment rate, and high job turnover both during recessions and expansions. However, the labor market also displays rigidity, because of segmentation, inequity, informality, inequality of earnings, high frequency of litigation, limited worker protection, and limited reach of labor laws (Carneiro 2003).

1.1 Economic Fluctuations and Continued Urbanization 1978−2002

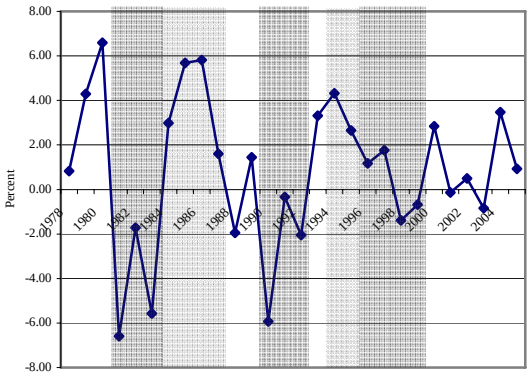
Brazil experienced a positive, but low average growth rate over the 25 years covered (Figure 1.1), however, wide economic fluctuations occurred. GDP per capita increased 18.6 percent from 1978 to 2002, i.e., 0.7 percent annual growth. Yet, the low average growth rate for the period hides a number of recessions and expansions. Growth rates fluctuated significantly and were as high as 6.7 and 5.8 percent annual growth in 1980 and 1986, respectively, and as low as -6.6 and -5.9 percent in 1981 and 1990, respectively (Figure 1.2). Five business cycles are analyzed in this paper and are identified and described in Appendix A. The shading in all figures marks these cycles; a dark shaded area identifies recessions, and a light shaded area identifies expansions.

Figure 1.1: Brazil GDP per capita, 1978−2005 (constant 2000 US$)



Source: WDI

Figure 1.2: Brazil GDP per capita growth, 1978−2005 (annual percent)



Source: WDI

The economic reforms of the 1980s and 1990s had negative effects on employment. The reforms aimed at liberalization of international trade and financial flows, fiscal discipline, price stabilization, and privatization.[5] These reforms, combined with currency appreciation and restructuring in the manufacturing sector, generally had negative implications for employment (Marshall 2004).

The relatively low labor protection in Brazil makes the labor market responsive to economic fluctuations. Generally, it is easy to dismiss workers in Brazil since labor protection is relatively low. On the one hand, strong labor protection may inhibit employment growth and increase unemployment. This may be the case, because protection stimulates substitution by deterring employers from recruiting during economic expansions and encourage temporary contracts, overtime, and precarious employment relations. On the other hand, constraints on dismissals help restrain unemployment growth during recessions and stabilize labor demand in the longer term (ibid.). In this way the relatively low labor protection in Brazil is a sign of labor market flexibility, but also an indicator of the existence of vulnerable groups, who are harder affected by economic shocks.

The economic and demographic evolution also changed the prevailing character of local areas. Table 1.1 shows how urbanization accelerated toward 2002 when just 15 percent of the working age population resided in rural areas. Youth tend to live to a larger extent than adult workers in rural areas. This is partly explained by the fact that rural families are larger. Also, a larger proportion of females than males live in urban areas. The change to more than 85 percent of the working age population living in urban areas naturally had implications for demand and supply mechanisms in the labor market.

[5] In less than five years after 1990 non-tariff barriers were removed, and the average import tariff fell from 32 percent to less than 13 percent (World Bank 2002a).

Table 1.1: Urbanization by Age and Gender, Brazil (1978−2002)				
		1978	1989	2002
Total (15─65 years)	All	70.1	76.7	85.3
	Female	71.6	78.1	86.6
	Male	68.5	75.2	84.0
Youth (15─24 years)	All	69.2	75.3	84.4
	Female	70.7	76.9	85.6
	Male	67.5	73.7	83.1
Adults (25─49 years)	All	71.0	77.7	86.3
	Female	72.1	78.8	87.4
	Male	69.8	76.5	85.0
Source: Own calculations on PNAD				

1.2 Literature Review

The Brazilian labor market as a whole has been widely studied, but long-run trends for youth as a group and their response to business cycles less so.

In a series of studies by World Bank (2007a, 2007b) youth at risk in Brazil are analyzed extensively, considering also labor market aspects. A cross section analysis of PNAD (see description in Section 2.1) for 2001 shows the Brazilian youth have serious difficulties in completing a successful transition into the labor market. Unemployment rates are much higher and employment rates lower for youth than for adults. Employment is found to be sensitive to gender; not race. Females face higher unemployment rates and lower employment rates in spite of their higher educational attainment. This is mainly explained by unpaid domestic work, discrimination, and social expectations.

In a jobs report on Brazil, the World Bank (2002a, 2002b) describes the general labor market over a long time period as a mixed picture. Employment increased slightly between 1974 and 1999, mainly driven by rural females. However, from the mid 1990s onward key indicators such as employment growth, labor force participation rate, unemployment rate, and income security worsened. Employment, unemployment, and wages responded well to macroeconomic fluctuations, but it is argued the results hide microeconomic rigidities.

Neri and Thomas (2000a) examine the impact of business cycles in Brazil, and find that less educated workers are adversely affected, and that recessions push youth into the labor market. They examine three recessions, and contrast these with three expansions over the period 1982−1999 using Brazil's monthly employment survey, PME (*Pesquisa Mensal de Emprego*). Findings show that mobility between employment states and income levels is higher among educated workers. The authors conclude that negative shocks carry more weight for youth and less educated, on average poorer workers, since the subsequent chances of recovery are slimmer. In addition, youth are more likely to start work or repeat a school year during recessions. Finally, the official unemployment rate is found to be insufficient as a labor market indicator because it only captures the formal labor market.

Building on these findings, Neri and Thomas (2000b) examine the impact of seven business cycles in Brazil in relation to movement in and out of unemployment and poverty using the same data. They find that during economic expansions unemployment is the state least likely to lead to poverty, and most likely to lead out of it. In contrast, during recessions unemployment is the state most likely to lead to poverty, but also most likely to lead out of it. This is explained by poor workers not being able to afford unemployment, but during economic expansions some workers use unemployment and unemployment insurance to search for better jobs.

Justesen and Verner (2007) analyze the effects of business cycles on youth in neighboring Argentina. Wage returns to different levels of education for different age groups and the likelihood of unemployment over the business cycle are analyzed using the EPH (*Encuesta Permanente de Hogares*) covering 1992−2003. Results suggest that Argentine youth in the period examined were affected more severely than adults by macroeconomic shocks through wider fluctuations in their unemployment rate and real wage returns. In response to economic fluctuations, and especially during economic downturns, youth were more negatively affected than adults in regard to real wage returns. Furthermore, more education meant higher wage returns, and tertiary education to some extent shielded against economic fluctuations. Also, education reduced the likelihood of unemployment. A key finding is that the lack of experience and connections, which is strongly associated with age, made youth more vulnerable with respect to business cycle fluctuations.

Zylberstajn and de Souza (1994) find that low skilled are the first to lose their jobs during recessions. They argue that labor hoarding by firms during recessions is common in Brazil, and this protects high skilled workers more than low skilled. Thus, unskilled or less experienced workers—such as youth—are the first to lose their jobs during recessions. At the same time, shortage of tertiary educated workers in Brazil combined with a shift in labor demand, led to an increase in the skill premium for tertiary educated over the 1980s and 1990s (World Bank 2004).

Duryea et al. (2001) find that negative income shocks pull Brazilian youth out of school, and push them into the labor market. In an analysis of the effects of economic shocks to household income on youth employment, the authors use the PME data over the period 1982−1998. Findings show high volatility in employment, with higher exit and lower entry rates being responsible for the decline in youth employment in the 1990s. Results from a probit model of the effect of the household head becoming unemployed (capturing loss of household income) suggest a pull effect making youth leave school, and a push effect moving them into the labor market. However, the impact is found to be small.

In conclusion, previous studies have dealt with a number of issues related to the topics covered in this paper. Youth in the labor market have been compared to adults by use of cross section data and findings suggest that youth are struggling. Long-term trends have shown a general deterioration for the Brazilian labor market as a whole and for youth in particular. Business cycles and negative income shocks tend to have adverse

impacts on youth and the less skilled. In fact, youth are more affected by business cycles fluctuations than adults through wider fluctuations in the unemployment rate and wages.

The current paper distinguishes itself from previous studies in a number of ways. Building on previous findings, the paper analyzes long-run trends and effects of business cycle fluctuations on the Brazilian labor market with particular interest in how youth fared over a period of 25 years. It differs from previous studies by analyzing a broad set of labor market indicators over a long time span with direct focus on youth. Rather than relying simply on the unemployment or wage rate, four labor market indicators are examined in detail for youth over a quarter of a century: Labor force participation, employment, unemployment, and hourly real wages. The analysis is taken one step further by evaluating the relative changes between youth and adults within five business cycles using the same indicators to find a pattern in the response to expansions and recessions. Besides considering the different age groups, the paper also considers gender, location, and skill level.

This study focuses on the Brazilian labor market and does not seek to provide an international comparison with countries in the region. For studies on Latin American youth in the labor market see, e.g., World Bank (forthcoming), ILO (2007), Gasparini et al. (2006), Cacciamali (2005), and Fawcett (2003), on interventions, Puerto (forthcoming), Llisterri et al. (2006), and Jamillo (2006), for a global perspective, World Bank (2007c) and O'Higgins (2003), and for developed countries, Ryan (2006).

2. Data and Labor Market Indicators

This section describes the data set used throughout the paper, and defines the main indicators analyzed in the following sections.

2.1 Data

The data used are Brazilian household data spanning 1978−2002. The data were obtained from the Micro Data Development Platform at the World Bank and are named PNAD (*Pesquisa Nacional por Amostra de Domicilios*). The data are produced by IBGE (*Instituto Brasileiro de Geografia e Estatistica*). The PNAD is a nationally representative stratified random sample of the Brazilian population, collected annually since the late 1970s. The data contain a comprehensive and comparable set of demographic and socioeconomic variables including detailed information on employment status, occupation, income, and education for all household members. The PNAD has a great advantage compared to formal labor market data, because it contains both formal and informal workers, and it is thereby more representative of the labor market. Formal and informal jobs are not discussed separately here, but workers from both sectors are included. The sample size is 290,000−530,000 individuals per year. There are no data for the census years 1980, 1991, and 2000, and the PNAD was neither carried out in 1994 for cost related reasons. Results for these missing years are therefore extrapolated using the year before and after. After each census year, the PNAD questionnaire has important

changes, and in 1992 even the definition of employment was changed. The data used here seek to account for these changes, but issues of concern will be discussed when relevant.

2.2 Labor Market Indicators

To analyze the situation for youth in the labor market a single measure does not provide an accurate picture. Therefore, multiple indicators are used to analyze the labor market situation for youth. These indicators are defined below.

Labor Force Participation Rate (LFPR)

The LFPR is a measure of the extent to which an economy's working-age population is economically active. It is defined as the proportion of the population group (for example youth) in focus (P) that is in the labor force (L). The labor force consists of people who are either employed (E) or unemployed (U):

$$LFPR = \frac{E+U}{P} = \frac{L}{P}$$

Employment Rate (ER) vs. Corrected Employment Rate (ER^C)

The ER is defined as the share of the population group in focus who is working:

$$ER = \frac{E}{P}$$

The ER indicates the proportion of employed workers out of those available for employment. Since this paper is specifically interested in a comparison between youth and adult workers, the definition of the standard employment rate could to a certain extent be misleading. Because a large proportion of youth attend school, the entire youth population is not available for the labor market. In contrast, only a small proportion of adult workers attend school, and practically the entire age group is available for employment. Thus, by excluding school attendees (*S*) a corrected employment rate is found, which may allow for a better comparison between age groups:

$$ER^c = \frac{E}{P-S}$$

The employment rates have potentially a measurement advantage compared to the unemployment rate, because the base used is a relatively constant population group. In contrast, the labor force used as base for the unemployment rate reflects both supply and demand factors, because a response to a weak labor market may be retraction from the group. Opposite, a strong labor market may attract people, who would normally not seek employment, to join the labor force. This movement in and out of the labor force makes the interpretation of the unemployment rate less clear, because the shifts may understate the employment conditions, both when they are good and bad. The employment rates may better reflect variation in demand, because the population is more constant over time (Fares et al. 2006).

Unemployment Rate (UR)

The UR is an indicator of the difficulty of finding work, as well as the willingness to accept an offer. The UR is defined as the proportion of the labor force that is without a job and actively seeking one.

$$UR = \frac{U}{L}$$

Hourly Real Wages (HRW)

The wages examined are estimated hourly real wages in Brazilian reales at 2002 prices.[6] The HRW has been calculated using monthly real income from the main job, and weekly hours worked in the main job. Since the return to labor and not capital is of interest, self-employed and employers are excluded, and wage and salaried workers (henceforth referred to as wage workers) are singled out for the analysis.[7] Thus, only employed wage workers reporting both monthly income and hours worked are included. Because of outliers dramatically affecting average income (specifically in 1979), the first and last percentiles have been discarded. Also, employed wage workers reporting 70 or more hours worked in the reference week are excluded. Wage income obviously does not show total income or consumption, but still indicates the impact of the business cycle on an individual in the labor market. More than 96.8 percent of wage workers between 15 and 65 years of age report both income from and hours worked in their main job. For employed youth and adults, 97.6 and 96.5 percent, respectively, have observed hourly wages. Thus, the response rate is very high and estimates are trustworthy.

Skill Levels

Besides age, gender, and location, the labor market indicators are also analyzed by skill level. Workers have different skills and therefore different productivity in the labor market. High skilled workers are more productive than low skilled workers, but generally high skilled workers also receive higher wages reflecting their productivity. Thus, workers with different skill levels may be affected differently in the long run and by business cycles, because production shifts and wages adjust. Skills are measured by years of schooling completed. Throughout the period covered, the Brazilin education system has been almost status quo in terms of years in school per level completed and will be treated as such (Table 2.1). Two skill levels are defined: High skilled workers are those with 9 or more years of completed schooling, and low skilled workers are those with 8 or less years of completed schooling (including those who have never attended school). The category “high skilled” includes workers who have at least started upper secondary school, and means to capture workers who have obtained basic skills such as numeracy and literacy, but also more advanced skills applicable to the labor market. This

[6] The official exchange rate (LCU per US$, period average) for 2002 was R$2.921 for US$1 (WDI).
[7] Movements between the work categories may also reflect labor market conditions and would as such also be a potentially interesting research topic.

means that the high skilled group does not single out the elite workers with tertiary education.[8]

Table 2.1: Education Levels in Brazil		
Primary school	1−4 years	Low skilled
Lower secondary	5−8 years	
Upper secondary	9−11 years	High skilled
Higher education	12+ years	

Source: Blom et al. (2001)

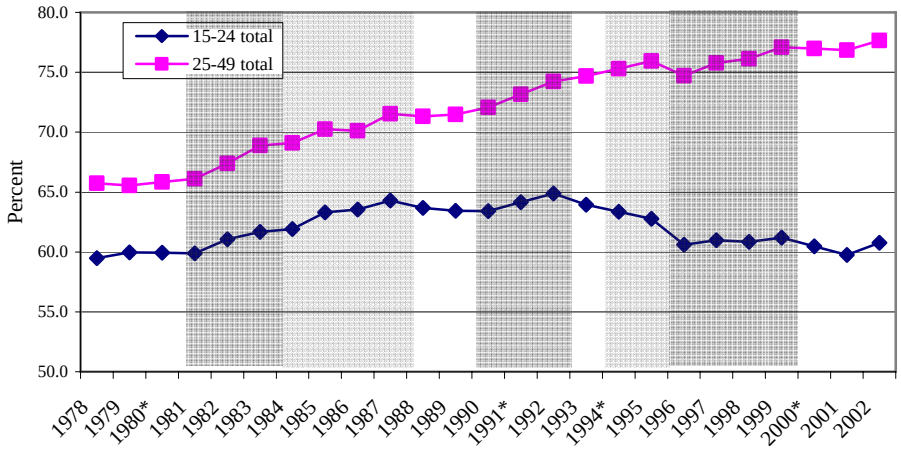
3. Long-Run Perspective and Trends in the Labor Market

This section considers trends in the Brazilian labor market for the period 1978−2002 by examining four labor market indicators (LFPR, ER [+ER^C], UR, and HRW), while the business cycle responses are discussed in Section 4.

3.1 Labor Force Participation Rate (LFPR)

The LFPR for youth (15−24 years) was almost the same in 2002 as in 1978, but with a peak in between (Figure 3.1). The LFPR for youth was close to 60 percent both in the beginning and end of the period, but the trend was downward since peaking at 64.9 percent in 1992. A reason for this trend may be a discouragement effect because of the high level of youth unemployment (Section 3.3), but also because of increased school attendance in the 1990s. In contrast, adult workers (25−49 years) experienced an almost continuously increasing LFPR; up by 18 percent from 66 to 78 percent.

Figure 3.1: Labor Force Participation Rate by Age Group in Brazil (1978−2002)



Source: Own calculations on PNAD

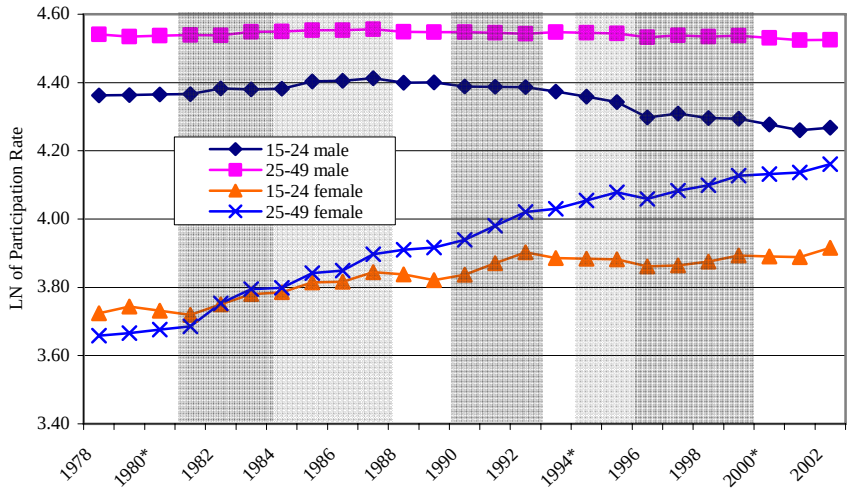
* Extrapolated years or significant changes in PNAD (all figures).

[8] While presenting no problem for defining the skill level, the years of schooling variable used for the definition is a censored variable with the value 15 for 15 years of education or above. Thus, average years of schooling, is downward biased.

Females experienced a significant increase in the LFPR (Figure 3.2). Coming from a low point, young and adult females increased their LFPR. While young females increased their participation by 21 percent, adult females increased theirs by 65 percent. Thus, although young females had a higher participation rate than adult females before 1982, a steeper increase for adult females opened a gap between the age groups. The gap increased to adult females having a 14 percentage points higher LFPR for than female youth by 2002.

The male LFPR declined for youth and remained constant for adults, thus narrowing the gap with females. While continuously above 92 percent, the adult male LFPR remained almost constant. For young males the LFPR peaked at 83 percent in 1987, but declined since to 71 percent, i.e., a 13 percent decrease. In spite of the decline in male participation and impressive increase in female participation, there is still a gap between the female and male LFPR, but the gap has narrowed significantly. Figure 3.1 also shows that the drop in adult male participation was more than offset by the increase in female participation; this has not been the case for youth.

Figure 3.2: Labor Force Participation Rate in Brazil by Gender (1978−2002)

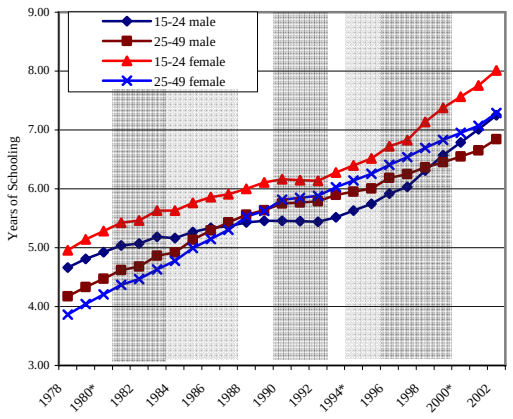


Source: Own calculations on PNAD

The increase in labor force participation for females is also linked to educational attainment, because the opportunity cost of not working increases with education.[9] Females have increased their average years of schooling significantly more than males (Figure 3.3) and by 2002 both young and adult females had more years of schooling than males on average. Thus, the significantly higher female school enrolment rate caused the change from adult females being less educated than males to the reverse situation (Figure 3.4). This gender gap will increase over the years to come.

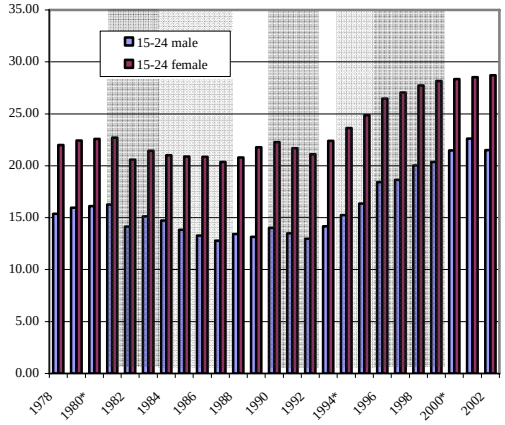
[9] Education is naturally also linked to location, because secondary and tertiary education facilities are located in urban areas.

Figure 3.3: Average Years of Schooling in Brazil (1978−2002)



Source: Own calculations on PNAD

Figure 3.4: School Enrolment Rates for Youth in Brazil, 1978−2002 (percent)



Source: Own calculations on PNAD

Youth have a higher LFPR in rural areas than in urban areas, but urban youth have been catching up because females entered the labor market (Appendix B). Rural youth had a higher LFPR than urban youth, because male participation was 13 percentage points higher in rural areas. Rural and urban female youth was at the same level in 1978, but a gap opened with urban females moving into the labor market and rural females leaving it. In 2002 the gap stood at 10.9 percentage points. The change may be explained by urban areas being more open for changes in the gender roles and rural areas being conservative, keeping at least young females locked in traditional pattern with household chores etc.[10] The change in gender patterns have nearly closed the gap between the overall rural and urban youth participation rates.

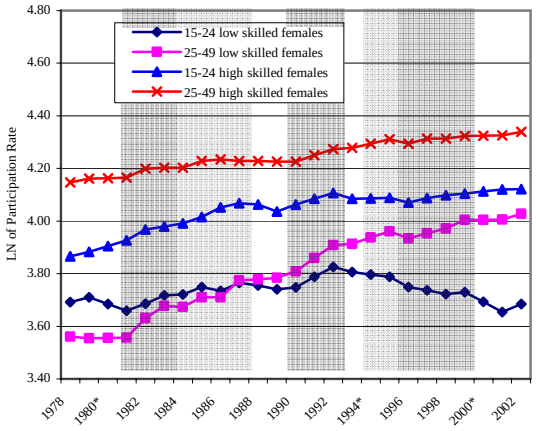
High skilled workers had a higher LFPR than low skilled in 2002. In 1978, low skilled youth had a higher LFPR than high skilled, but after 1981, the high skilled had the highest rate. This change occurred because the LFPR of low skilled youth dropped 8.0 percent, while the high skilled increased theirs by 22.9 percent. In contrast, both high and low skilled adults experienced an increase, but while the low skilled increased their participation by 15.4 percent the participation of high skilled increased just 6.8 percent.

These results are primarily driven by the change in the female LFPR. Figures 3.5 and 3.6 reveal that high skilled adult females increased their participation by 21.1 percent, and their young peers increased theirs by 29.1 percent. Low skilled adult females increased their participation rate by 59.5 percent, while their young peers decreased theirs by just 0.7 percent. In contrast, the LFPR fell for all male skill levels and age groups, besides high skilled youth who increased their participation by 17.5 percent. Also, until

[10] This hypothesis is supported for adults where urban females drove the trend with an increase in the participation rate from 39.5 to 65.7 percent between 1978 and 2002 (up by 66 percent). However for adults, rural females also started a change of pattern and entered the labor market; their participation rate went up from 36.9 to 53.5 percent (up by 45 percent).

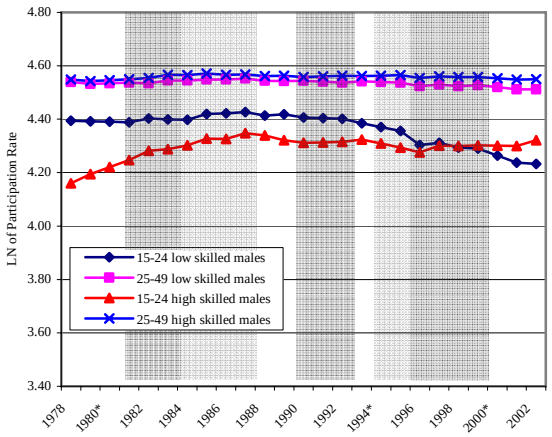
around 1990 there was a general increase in participation for all youth, but afterwards only high skilled females increased their participation rate while participation fell for all other youth.

Figure 3.5: Labor Force Participation Rate for Females in Brazil by Skill Level (1978−2002)



Source: Own calculations on PNAD

Figure 3.6: Labor Force Participation Rate for Males in Brazil by Skill Level (1978−2002)



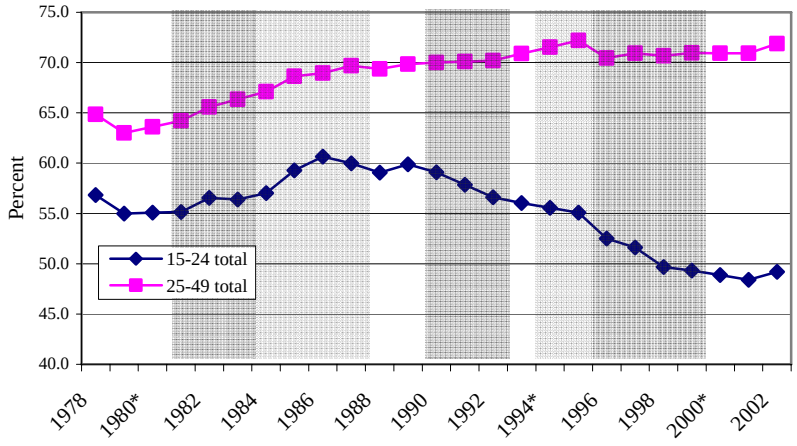
Source: Own calculations on PNAD

To summarize, the labor force composition has changed significantly. The LFPR of young workers is below that of adults, and the gap has widened. Male youth continue to have a higher participation rate than females, but the gap is closing, because especially urban females entered the labor market, while rural males left it in the 1990s. This may be explained by females expanding the educational gap with males, and by a change in the traditional gender patterns. By 2004, the high skilled had higher participation rates than the low skilled. Furthermore, adults had higher participation rates than youth, and especially urban—but also rural females and low skilled—had entered the labor market.

3.2 Employment Rate (ER) and Corrected Employment Rate (ER^C)

The ER for Brazilian youth decreased in absolute terms and relative to adults between 1978 and 2002 (Figure 3.7). The ER for youth is down by 14 percent from 57 to 49 percent in 1978 and 2002, respectively. In contrast, adults experienced an increase in the ER by 11 percent over the period. Thus, the gap between youth and adults increased. Moreover, after the early 1990s a continuously smaller proportion of youth found jobs, while adults improved their likelihood of working. Considering the economic growth in most years after 1993, it is interesting that employment did not increase, i.e., there was jobless growth.

Figure 3.7: Employment Rate in Brazil (1978−2002)

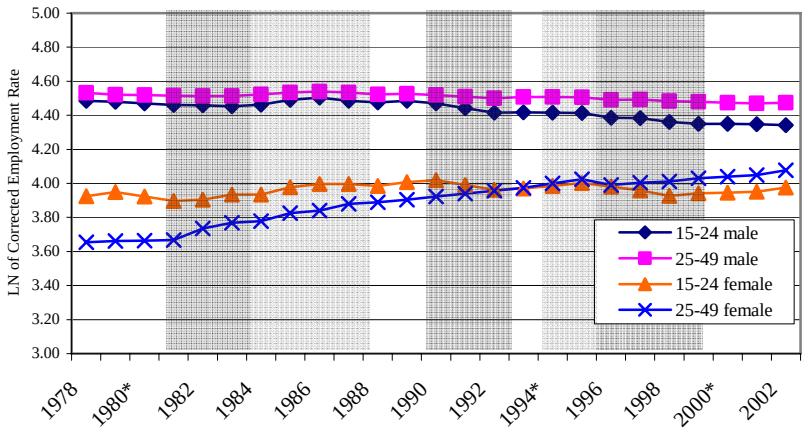


Source: Own calculations on PNAD

The higher ER for adults, and in particular the drop in youth employment could be explained by an increasing share of youth being in school and thereby not available for the labor market. School enrollment rates confirm this to some extent (Figure 3.4), because they were almost constant or even slightly falling until 1992, but increasing afterwards. Thus, correcting for school enrollment, may give a clearer picture of the employment situation for youth.

The drop in the employment rate is not fully explained by increased school enrollment, and an overall declining trend driven by male youth persists when considering the corrected employment rate, i.e., the trends are similar to that of the standard ER (Figure 3.8). Excluding those attending school increases the employment rate compared to the standard ER as expected, but the trend of a falling youth employment after the early 1990s remains. Given that the overall picture of employment trends does not change significantly by correcting for school enrollment, the analysis continues with main focus on the standard ER.

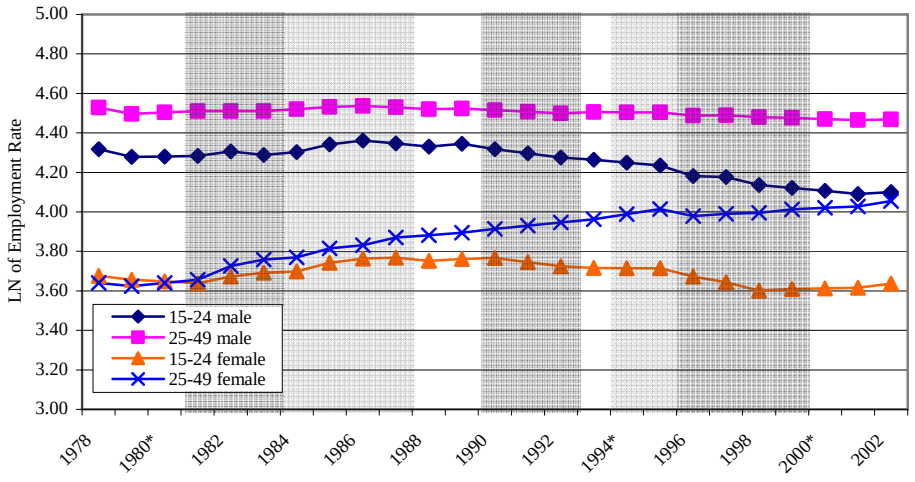
Figure 3.8: Corrected Employment Rate in Brazil by Gender (1978−2002)



Source: Own calculations on PNAD

While the ER fell for youth relative to adults, only adult women experienced an increase (Figure 3.9). Since the late 1980s both female and male youth experienced a falling ER. In contrast, adult females not only entered the labor market, a large share of the entrants also found employment. In 1978, young females were more likely to be employed than adults, but with the higher growth rate in the adult female ER, the profile shifted over the 1980s, and a wide gap opened between the age groups (27 percentage points in 2002 vs. 15 percentage points in 1986). Similarly, the drop in the young male ER increased the gap with adults (21 percentage points in 2002).

Figure 3.9: Employment Rate in Brazil by Gender (1978−2002)

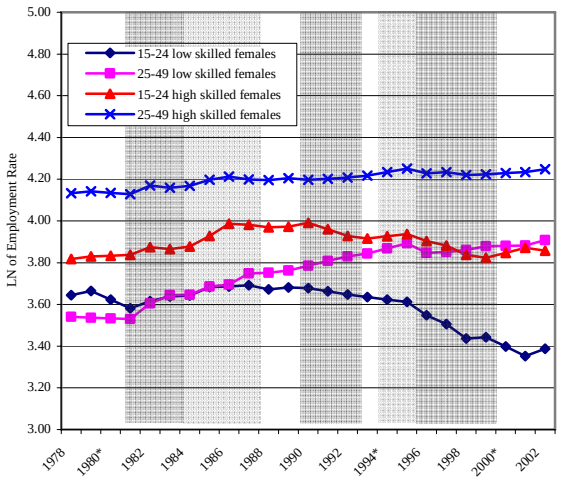


Source: Own calculations on PNAD

Rural youth have been more employed than urban youth, but location is less important for adults (Appendix C). A gap of 7−13 percentage points in favor of rural youth employment existed over the period. The gap is almost entirely due to males, for whom urban youth have lower employment rates. This follows from their lower participation rate. In contrast, urban and rural female youth employment rates were almost identical over the years. Thus, the increase in urban female participation did disturbingly not lead to increased employment. For adults, rural males had slightly higher employment rates than urban males, but vice versa for females.

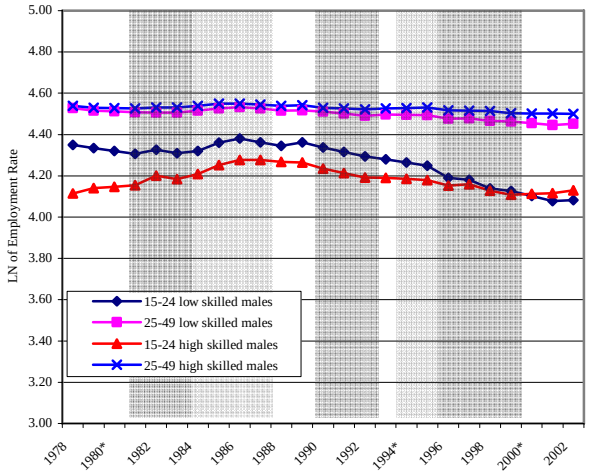
High skilled workers generally performed better with respect to employment than low skilled workers; only adult females experienced a higher relative increase for the low skilled. Thus, there is a distinction between the growth/deterioration rates for different skill levels. The pattern of adult females tending over time to find employment, and young females and all males to exit or at least not enter employment, is fairly consistent irrespective of skill level (Figures 3.10 and 3.11). However, while low skilled female youth had a higher ER than the high skilled in the early 1980s, the relationship reversed around 1982. This gap increased afterwards because employment declined the most among low skilled youth.

Figure 3.10: Employment Rate for Females in Brazil by Skill Level (1978−2002)



Source: Own calculations on PNAD

Figure 3.11: Employment Rate for Males in Brazil by Skill Level (1978−2002)



Source: Own calculations on PNAD

In summary, employment has fallen significantly for youth both in absolute terms and relative to adults. In fact, even the economic growth in the mid 1990s was jobless. While both female and male youth lost employment after the late 1980s, adult females not only entered the labor market, they also found employment. In contrast, male youth lost ground and the gap with adults widened. A larger proportion of rural than urban male youth were employed. However, location was less important for female youth, and the increased labor force participation rate among female urban youth did not lead to employment. For adults, rural males had higher employment than urban males, but vice versa for females. Employment fell the most among low skilled youth compared to the high skilled. The opposite was observed for adults, because low skilled females increased employment significantly following the surge in participation in the labor market.

3.3 Unemployment Rate (UR)

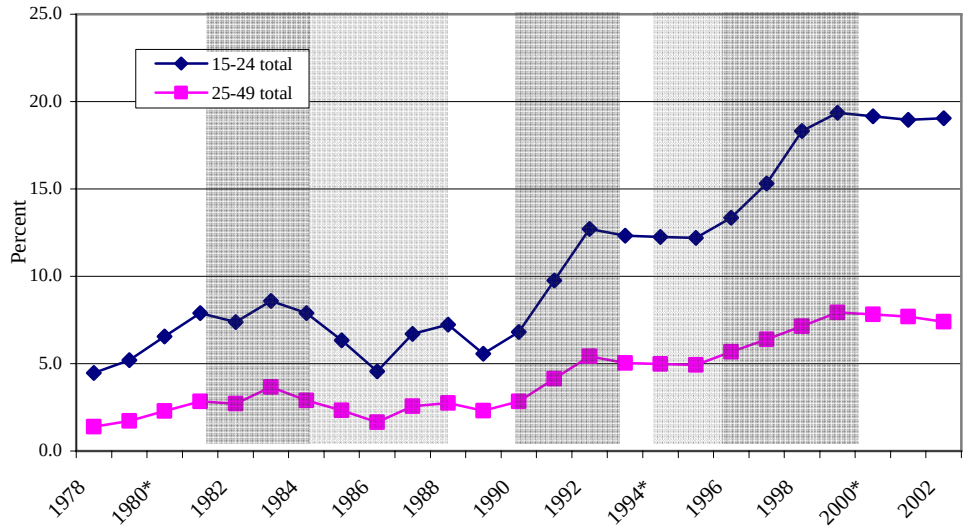
Between 1978 and 2002, the UR increased 4.3 and 5.3 times for youth and adults, respectively, mainly due to a surge in the 1990s (Figure 3.12). The unemployment rate went up substantially for youth and adults. The increase was even more dramatic than the numbers for the entire period suggest, because the increase mainly occurred in the 1990s, where both the youth and adult UR more than tripled. Until around 1996, the labor market created almost a sufficient number of jobs for the growing labor force, but job creation was insufficient afterward. The jobless growth in the 1990s led to a severe increase in youth unemployment; peaking at 19.4 percent in 1999. Given the high level of youth unemployment, there is likely also to be a discouragement effect keeping youth out of the labor market, and thus leading to the UR underestimating the severity of the situation.

A change in definition of unemployment in 1992 explains part of the jump in unemployment between 1990 and 1992. Prior to 1992, a person was classified as being in

the labor force if working at least 15 hours during the reference week, and not considered part of the labor force if working less than 15 hours a week. From 1992 onward, workers only needed to work one hour during the reference week to be considered in the labor force. In consequence, all individuals, who worked few hours but also searched for jobs, were classified as unemployed, and thus the redefinition would lead to an increase in the unemployment rate.[11] Also workers for own consumption were included as workers from 1992 onward.[12] Thus, with more youth than adults working less than 15 hours a week, the group was more affected by the change in definition. However, even though the change in definition may explain part of the increase in unemployment, Cuadros (2003) finds that just 1.4 percentage points of the jump in the overall UR is explained by it. Also, considering the increase in labor force participation combined with the decline in employment, it is clear that a real increase in unemployment occurred.

The unemployment ratio between youth and adults remained stable despite increasing unemployment. The ratio of the youth to adult UR remained fairly constant at 2.4−3.2 in spite of wide economic fluctuations. Even though adults experienced a relatively bigger increase in the UR, the increase in the UR for youth was more notable, because of the much higher initial level of unemployment.

Figure 3.12: Unemployment Rate in Brazil (1978−2002)



Source: Own calculations on PNAD

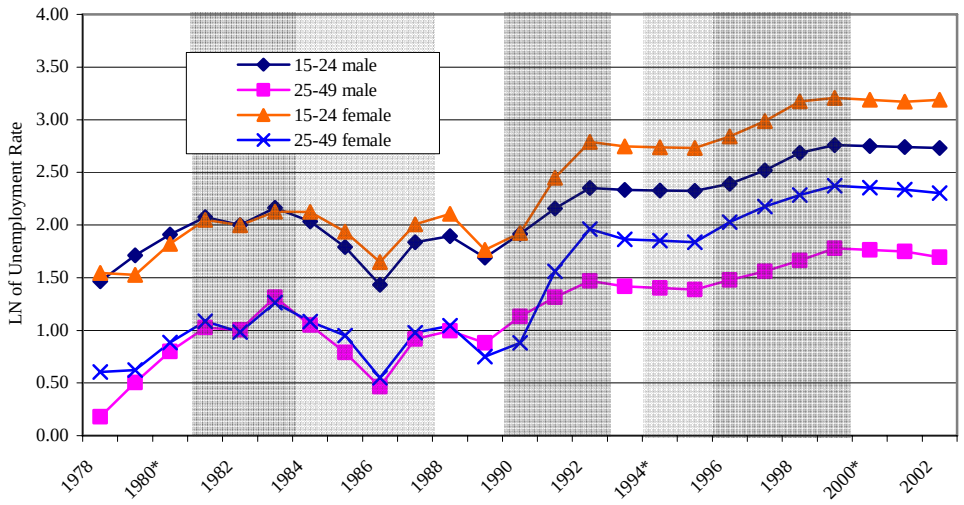
In 1992 a gap opened between the female and male UR for both youth and adults, with a higher unemployment rate among females (Figure 3.13). Between 1978 and 1990, the UR for females and males were almost identical within each of the two age groups. However, just two years later female youth unemployment was 5.8 percentage points higher than for males, and for female adults it was 2.3 percentage points higher than for

[11] I am grateful to Phillippe Leite for this observation.

[12] Workers for own consumption are all workers working for themselves and not receiving a wage. These were not defined as labor force participants before 1992.

males. By 1998 the gap had increased to 9.3 and 4.6 percentage points for youth and adults, respectively. Part of this change is explained by the change in definition of unemployment in 1992, which did not affect females and males equally. Since a larger proportion of women work few hours per week, more women were reclassified as unemployed after the redefinition.

Figure 3.13: Unemployment Rate in Brazil by Gender (1978−2002)

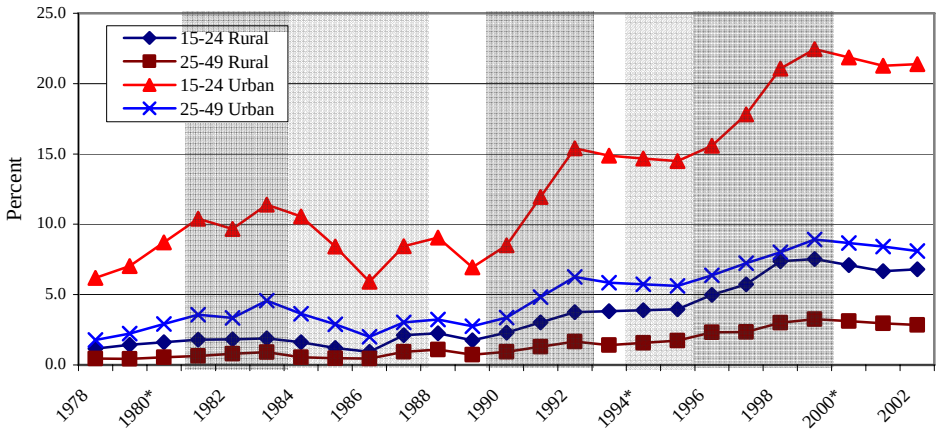


Source: Own calculations on PNAD

The level of urban youth unemployment has reached a disturbing level. The gap between urban and rural youth unemployment increased from 5 percentage points in 1978 to 15 percentage points in 2002 (Figure 3.14). This, combined with the higher initial level for urban youth, meant that they were adversely affected even though the relative increase in unemployment was lowest for that particular age group. The recession in the early 1990s created a break with urban youth unemployment more than doubling (from 6.9 to 15.4 percent) in just three years (1990─1992).[13] However as noted, also rural unemployment increased significantly and, in fact, it six-doubled, but still ended up at just 6.8 percent. Thus, the increased participation rate in urban areas, especially for females, combined with a lower employment rate led to a higher unemployment rate in urban areas. For adults, urban unemployment was also higher than rural unemployment, but by no means by as much as for youth.

[13] Again, part of the increase is explained by the change in definition of unemployment in 1992. As for women, urban youth may have been affected different from rural workers according to how many hours they worked.

Figure 3.14: Unemployment Rate in Brazil by Location (1978−2002)



Source: Own calculations on PNAD

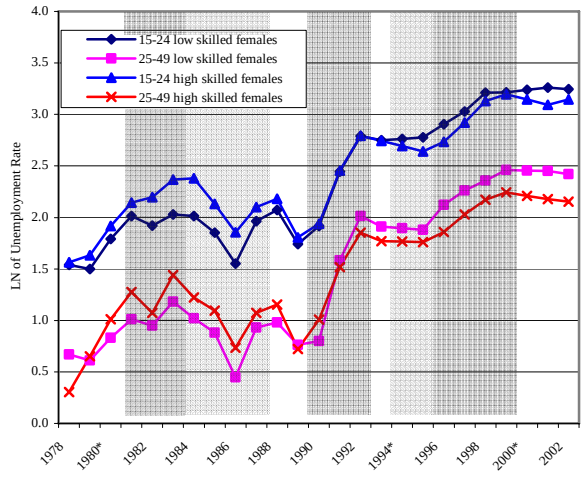
High skilled workers had generally a lower UR than the low skilled at the end of the period, but this only came to be true for women in the early 1990s (Figures 3.15 and 3.16, next page). The UR does not differ much between skill groups, but generally the UR was slightly higher for the low skilled in the 1990s. Actually, high skilled females had a higher UR than low skilled in the 1980s, but since the beginning of the 1990s low skilled females had the highest unemployment rate.[14] Only high skilled male youth experienced a higher UR than their low skilled peers throughout the 1990s. This latter observation may be explained by longer search time, financial freedom, and self-selection.[15]

In summary, unemployment skyrocketed for youth, especially in the 1990s, and reached 19.4 percent in 1999. In relation to adults, youth unemployment was close to three times higher since adults reached 7.9 percent in 1999. As a result of the surge in female labor force participation and lack of jobs (as well as a redefinition of unemployment), female unemployment jumped in the early 1990s and the group continued to suffer from a higher unemployment rate than males for the remainder of the period. The upward trend in youth unemployment was mainly led by urban areas, however, also rural areas experienced an increase, but from a much lower level. In relation to skills, education shielded to some degree against unemployment.

[14] The continuous increase in the UR for low skilled is likely to be biased by heterogeneity and self-selection. This is the case, since the high skilled group grows in relative size with the increasing education attainment over time. With more people staying longer in school, a self-selection process of continuously worse mean workers leaving school early takes place.

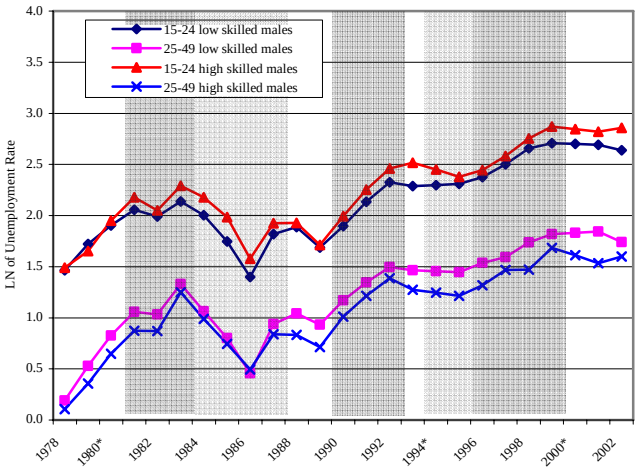
[15] Duration of unemployment may be linked to financial freedom because youth from rich households are more likely to be high skilled and they can afford longer search time. Likewise, if the initial job match for new labor market entrants is considered important for career and income prospects, the richer and high skilled youth may decide to search longer for jobs to make the most of it. Self-selection relates to the low skilled as some would leave school early because of a job opportunity. However, these arguments assume male youth are treated and behave different from female youth in the household and labor market since similar results are not found for female youth.

Figure 3.15: Unemployment Rate for Females in Brazil by Skill Level (1978−2002)



Source: Own calculations on PNAD

Figure 3.16: Unemployment Rate for Males in Brazil by Skill Level (1978−2002)



Source: Own calculations on PNAD

3.4 Work Category and the Hourly Real Wage (HRW)

The majority of Brazilian workers are wage workers. The group of interest in respect to remuneration for work, rather than for returns to capital, is the group of wage workers. Considering the labor market in a broad sense by including unpaid and domestic workers Tables 3.1−3.3 allow at least four interesting observations in the Brazilian labor market: First, table 3.1 shows that the majority of Brazilian workers are wage workers, confirming the importance of the group for whom wages are investigated. Second, nearly one in four is self-employed, while less than one in twenty are employers. Third, a significant proportion work unpaid or as domestic workers (14 percent); two potentially vulnerable groups. Finally, little changed between 1978 and 2002 for the labor market as a whole.

Table 3.1: Work Category, Brazil 1978−2002 (15-65 years)

	1978	1989	2002
Wage workers	58.3	61.4	58.0
Self-employed	24.2	22.3	23.3
Employer	3.4	4.5	4.5
Unpaid worker	8.5	6.2	5.8
Domestic worker	5.7	5.7	8.4

Source: Own calculations on PNAD

A relatively large proportion of youth are wage workers, unpaid workers, and domestic workers, and a larger share of adults are self-employed or employers (Table 3.2). While young workers are more likely to be wage workers, unpaid, or domestic

workers than adults, they are less likely to be self-employed or employers.[16] Compared to 2002, a larger proportion of youth were unpaid workers (15.6 percent), and a smaller proportion of youth were wage workers (64.5 percent) in 1978.

Table 3.2: Work Category by Age, Brazil 2002		
	Youth (15−24 years)	Adults (25−49 years)
Wage workers	68.2	58.6
Self-employed	10.5	24.0
Employer	0.8	5.2
Unpaid worker	11.7	3.7
Domestic worker	8.9	8.5
Source: Own calculations on PNAD		

Young males are wage workers, self-employed and unpaid workers, while females also work unpaid and as domestic workers (Table 3.3). Young males are on a direct track to become breadwinners since they help out in the household enterprise, work in a paid job, or start their own business. In contrast, young females are more likely to help out in the household, do chores, and take care of the children. The distribution for young males was the same in 2002 as in 1978, but females changed to more being wage workers, and less working unpaid or as domestic workers. These observations match the changes in the discussed labor market indicators and suggest an improvement for females as gender inequality and dependency are reduced.

Table 3.3: Work Category for Brazilian Youth, 2002		
	Male	Female
Wage workers	73.3	60.1
Self-employed	12.1	8.1
Employer	0.9	0.5
Unpaid worker	12.9	9.6
Domestic worker	0.9	21.6
Source: Own calculations on PNAD		

Thus, the majority of employed youth and adults are wage workers, and for this group hourly real wages will be investigated to see how returns to labor have changed over time and across age, gender, location, and skills.

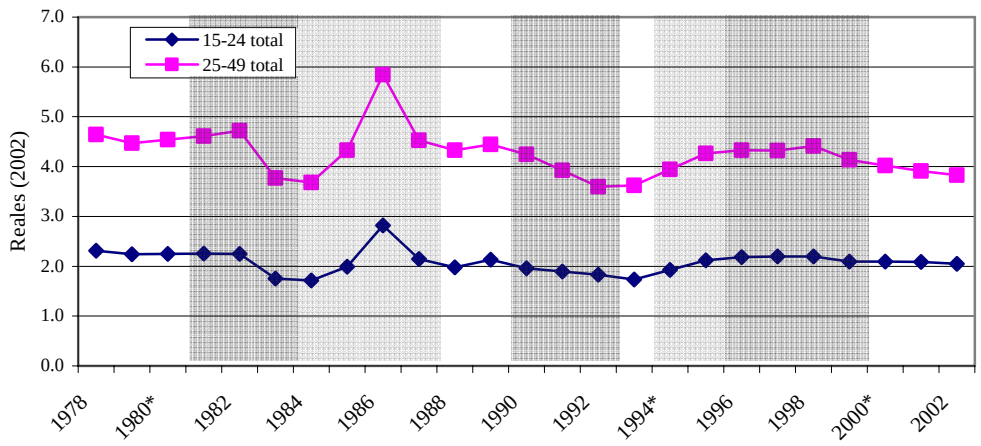
The HRW decreased between 1978 and 2002; only a deceiving peak in 1986 breaks the trend (Figure 3.17). The average wage decreased for both young and adult workers. Looking at the wage evolution, the peak in 1986 catches the eye, but wages for this particular year are deceiving (Ferreira et al. 2006). What affected wages dramatically

[16] The observation of young workers being less self-employed than adults is expected since a life cycle in the labor market, in the broad context defined here, could include work initiation by doing household chores or helping out in the family business, then move into paid employment and later, if sufficient savings, skills, and connections have accumulated, start a business and become self-employed or even expand to become an employer.

in 1986 was the expansionary cruzado stabilization plan.[17] During September 1986, when the PNAD survey was conducted, prices were frozen according to the plan and rationing and black markets existed. Thus, real wages increased because frozen prices and rationing created a mismatch between monetary income and welfare, since goods were not always sufficient to satisfy demand. The Cruzado plan was abandoned the same year and inflation surged in 1987 to restore equilibrium prices. The effect on observed real wages was also a return to a level close to the one in 1985. In general real wages are considered to have increased in 1986 (ibid.), but not by the approximately 45 percent observed for youth and adults in Figure 3.17.

Wages fell for both age groups and young workers had lower wages than adults. The observed drop in wages from the peak in 1989 to 2002 was by 4.0 and 13.9 percent for youth and adults, respectively. In addition, there is a wage gap between youth and adults. Adults received 1.9−2.2 times what youth received. Thus, in spite of fluctuation and the larger relative drop in adult HRW after the mid 1980s, the ratio between youth and adult wages remained almost fixed. Finally, the jump in wages between 1993 and 1995 coincides with the minimum wage being changed to an annual adjustment rather than a monthly as a result of the falling inflation. The increasing minimum real wage may have reduced flexibility.

Figure 3.17: Hourly Real Wage in Brazil (1978−2002)



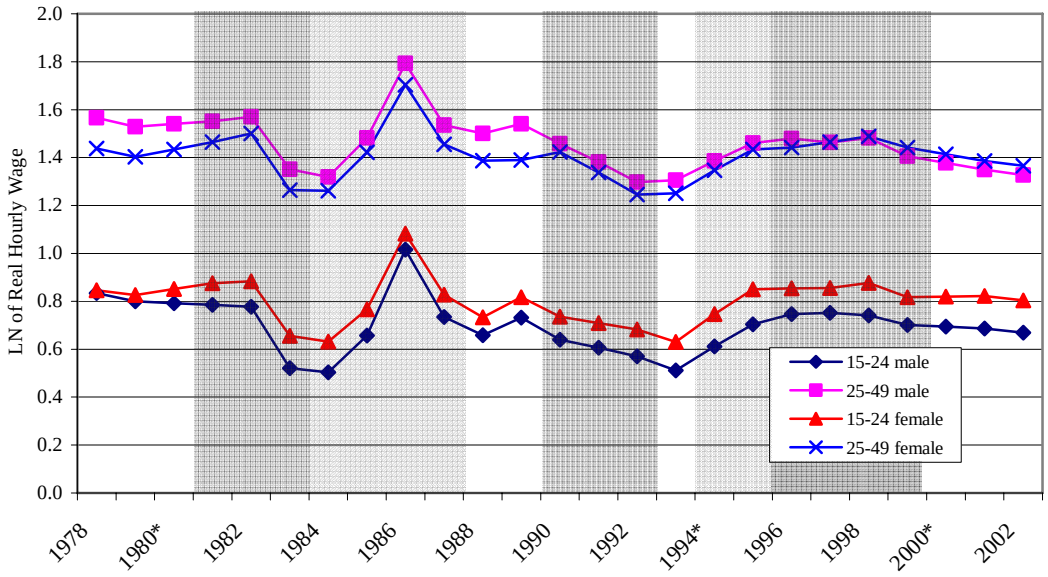
Source: Own calculations on PNAD

Females changed to have a higher average HRW than males, but not when accounting for other characteristics (Figure 3.18). In 1978, female youth received 1.1 percent more than males, while female adults received 12.0 percent less than males. By 2002, the gap for youth had increased to 14.3 percent and reversed for adults. Important reasons for this change are the higher education of females, self-selection out of the labor

[17] Thus, the results reported are correct and do not reflect changes or errors in the PNAD in any way.

force of females with low earnings potential vis-à-vis their husband and from wage work into self-employment for males with the highest earnings potential.[18]

Figure 3.18: Hourly Real Wage in Brazil by Gender (1978−2002)



Source: Own calculations on PNAD

Urban wages are substantially higher than rural wages, but they also dropped the most. Urban wages for youth fell over time both in real terms and relative to rural youth (Appendix E). From urban wages for youth being 95 percent higher than rural wages in 1978, they fell to a level 66 percent higher in 2002. Also wages for urban adults went down compared to rural adults'. The decline in urban wages results partially from wage pressure from the high and increasing urban unemployment. However, since male wages fell more than females' in both rural and urban areas, and female wages increased in rural areas, there is more to it than that; at least it is notable that in spite of the surge in female unemployment, their wages were still catching up on males'.

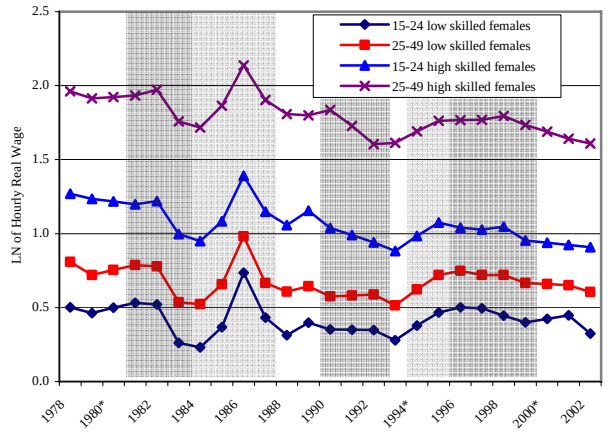
High skilled workers earn more per hour than low skilled, but the skill premium is decreasing (Figures 3.19 and 3.20). For both females and males the HRW is higher for high skilled workers than for low skilled irrespective of age. However, the skill premium (high vs. low) decreased over the 1990s. For male youth the skill premium decreased

[18] There are at least three reasons for females to receive the highest HRW on average: First, a larger proportion of young females than males are high skilled. Young females' skills over time determine the skills of adult females (Appendix D). In this way the proportion of high skilled has been increasing faster for women than for men. Second, Table 3.3 suggested that self-selection of the most capable males into self-employment and wage work may be an issue. This would imply that the mean employed male wage worker is less attractive to the labor market than the mean female worker, ceteris paribus. Further support to this argument is the fact that self-employed males and male employers have a higher HRW than females in the same work categories, but this includes returns to capital also. Third, females with lower earnings potential may self-select out of the labor force because of a comparative disadvantage vis-à-vis their husband.

from 145 to 82 percent in 1988 and 2002, respectively, while the skill premium for female youth declined from 110 to 79 percent over the same years. Adults had higher returns to skills, but experienced a similar decline. Thus, the decline in skill premium in the 1990s was steeper for males than females, and the skill premium was almost equal across genders in 2002. The higher skill premium for adults is partly explained by a wider education gap between high and low skilled for adults than for youth.[19] The decline in skill premium may be the result of the increasing supply of skilled workers.[20]

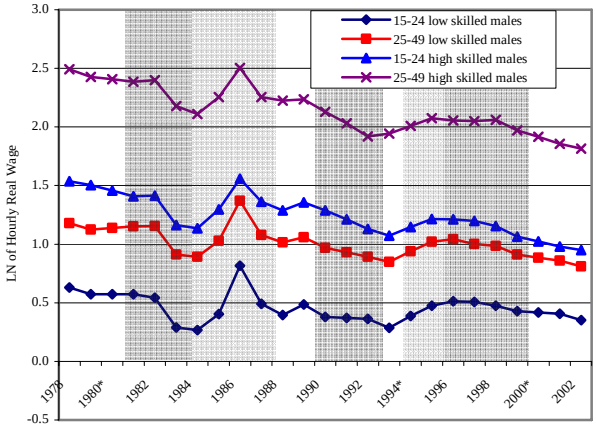
For each skill level males received a higher HRW than females, but work sector and other characteristics explain the difference. While early studies showed signs of discrimination, Birdsall and Fox (1985) explain the gender wage differential by other factors; at least for the case of schoolteachers back in 1970. Arabsheibani et al. (2003) point to work sector as the determining factor since workers in manufacturing and related male dominated activities earn more than workers in other sectors.

Figure 3.19: Hourly Wage for Females in Brazil by Skill Level (1978−2002)



Source: Own calculations on PNAD

Figure 3.20: Hourly Wage for Females in Brazil by Skill Level (1978−2002)



Source: Own calculations on PNAD

In summary, wages have gone down over the 25 years covered. The increasing majority of youth are wage workers, but a substantial proportion of female youth work unpaid or as domestic workers. Hourly real wages declined for both youth and adults, but remained stable in ratio with youth receiving only half of what adults received. While females had higher wages than males on average this is explained by skills and self-

[19] On average, high skilled adults had 7.6 years of schooling more than low skilled adults in 2002, while the gap between high and low skilled youth was 5.4 years.

[20] A former study has shown decreasing returns to secondary education possibly reflecting excess supply and low demand because of declining quality of education (Blom et al. 2001). Moreover, the study found that returns to tertiary education increased over time, because of increasing demand of highly skilled workers. For comparison with the results found here one needs to keep in mind that high skilled are here defined as all who have at least initiated higher secondary school. Therefore it includes not only workers who are part of the tertiary educated elite, but also workers who have only acquired relatively basic work skills.

selection. Accounting for skill levels alone, males have higher wages than females, but males also experienced a steeper decline, leading wages for the two groups to converge in spite of the massive surge in female unemployment. In terms of location, urban wages are higher than rural wages, but rural wages are catching up. For youth, wages in urban areas dropped significantly in response to the high and increasing urban unemployment rate. High skilled workers earned higher wages than low skilled, but the skill premium decreased and more so for males than females, leaving the returns to skills almost equal across genders in 2002; possibly as a result of the expanded supply of high skilled (especially secondary educated) workers.

With these long-run trends in mind, the following section addresses the changes in the labor market indicators within business cycles.

4. Business Cycle Perspective of the Labor Market

Brazil has been through an economically turbulent period between 1978 and 2002 (Figure 1.2). In sharp contrast to the previous decades, the country plunged into alternating short-term cycles of recessions and expansions with spiraling inflation in the 1980s. The real annual changes in the main labor market indicators are presented in Tables 4.1 and 4.2 for each of the five business cycles in the 1980s and 1990s investigated (Appendix A).[21]

4.1 Economic Recessions

Youth are adversely affected in terms of participation and employment during recessions. The LFPR increased more for adults than for youth during all three recessions, a result mainly driven by the increase in adult female participation (Figure 3.5). Still, labor force participation went up for youth during the first two recessions, confirming earlier findings of youth being pushed into the labor market during recessions. Moreover, youth have been less positively or more negatively impacted with respect to both employment and corrected employment compared to adults during the three recessions (Table 4.1). While the smaller increase in the LFPR for youth could indicate that recessions deter youth from entering the labor market and therefore increase the incentive to stay in school, the ER versus the ER^C shows that the opposite is the case for the first two recessions; youth tend to leave school during recessions. However, between 1996 and 1999 the change in school enrollment followed the general upward trend.

The three economic recessions in the 1980s and 1990s severely affected the unemployment rate for both youth and adults.[22] Adults experienced a relatively bigger

[21] Results are not de-trended, because the full change during business cycles is of interest. However, the general findings are not sensitive to de-trending.

[22] The annual change in the UR for the recession in 1990−1992 is infected by the dramatic level change following the redefinition in PNAD. For the purpose of comparison across age groups the bias can be removed by considering the difference between annual changes for youth to those of adults. Of course, it is

increase in the UR than youth did in all three recessions. However, it is important to keep in mind the much higher level of unemployment for youth. Thus, with similar relative increases in the UR for youth and adults in the two recessions in the 1990s, a larger proportion of youth in the labor force moved into unemployment.

Table 4.1: Annual Change in Brazilian Indicators During Recessions (percent)						
	1981−1983		1990−1992		1996−1999	
	Youth	Adults	Youth	Adults	Youth	Adults
Labor force participation rate	0.97	1.52	0.76	1.26	-0.64	0.38
Employment rate	0.79	1.42	-1.87	0.17	-2.73	-0.43
Corrected employment rate	-0.21	0.98	-2.02	0.17	-1.58	-0.35
Unemployment rate	9.48	17.05	31.67	32.93	12.24	12.67
Hourly real wage	-7.95	-6.01	-4.97	-6.82	-0.30	-0.79
Years covered	3		3		4	
Source: Own calculations on PNAD						

Wages responded markedly to recessions, but less so in the late 1990s. Wages decreased significantly when unemployment increased during the first recession, but following the response in wages declined. The HRW fell 8 percent per year for youth in the first recession, nearly 2 percentage points more than the fall in adults' HRW. However, in the recessions in the 1990s youth lost relatively less ground in respect to wages. The relative increase in wages for youth may have increased rigidity and caused a loss in employment. This issue is addressed specifically in a separate paper building on the findings here.[23]

Young females increased both labor force participation and unemployment rates during recessions. Female youth increased their employment rate more or experienced a smaller decrease than male youth during recessions, but increased female participation in the labor market simultaneously led to more unemployment for the group. Also, adult females increased their labor force participation and employment rates, while adult males experienced a larger reduction in wages.

The pattern for high and low skilled workers changed with the recessions. While the first recession left an unclear picture of the value of skills, high skilled workers experienced a larger fall in the HRW than low skilled in the recession in the early 1990s, and in the late 1990s high skilled fared generally worse than low skilled. While both high and low skilled youth did not suffer as much as adults with the same skill level in the first recession (ignoring wages for the moment), the 1990s' recessions offered less comfort for youth, because they generally performed worse in the labor market than adults did irrespective of skill level.

In summary, youth have been worse affected during recessions than adults in terms of labor force participation, employment, and unemployment, but better in terms of

still likely the change in definition did not affect youth and adults equally, but it is more reliable than the real annual changes alone.

[23] Wage Rigidity and its Implications for Brazilian Youth (Fares and Justesen, forthcoming).

wages which may have increased rigidity. It appears that youth had less incentive to enter the labor market and a harder time finding employment or they were more likely to leave employment than adults during recessions. Although unemployment increased relatively more for adults, the high level of youth unemployment meant that a larger proportion of youth in the labor market was affected. The relative wage increase for youth may explain part of the unemployment jump, because while wages reduced the most for youth in the first recession, this was reversed in the 1990s and labor demand may consequently have dropped and caused a loss in job creation for young workers.

4.2 Economic Expansions

Given that the results show that youth suffer more than adults during recessions, it would be reasonable to anticipate that youth also tend to catch up during periods of economic expansion. However, results indicate that this is not the case. In fact, youth are also largely adverse affected during periods of expansion.

While results across business cycles are not identical, there is little evidence for youth to be catching up on adults during expansions. Findings show that the LFPR as well as the ER and ER^C increased slightly more for youth than for adults in the first growth period, but significantly less than adults in the last period (Table 4.2). During both periods unemployment declined, but relatively less so for youth.

Table 4.2: Annual Change in Brazilian Indicators During Expansions (percent)

	1984−1987		1994−1995	
	Youth	Adults	Youth	Adults
Labor force participation rate	1.04	0.95	-0.92	0.84
Employment rate	1.56	1.23	-0.85	0.90
Corrected employment rate	1.05	1.24	0.59	0.95
Unemployment rate	-6.01	-8.56	-0.53	-1.05
Hourly real wage	5.22	4.70	10.63	8.52
Years covered	4		2	

Source: Own calculations on PNAD

Wages were also pro-cyclical during periods of expansion for both youth and adults, and youth saw the largest increase. However, the significant increase in wages in the last expansion did not continue the following years even though GDP per capita growth remained positive until 1997. This is likely to be the case because of the elevated level of unemployment putting wages under pressure.

Young males did generally better than females during the 1980s' economic expansion, but the opposite was the case in the mid 1990s. In the first expansion, male youth did better than females measured by most indicators. However, in the mid 1990s young males suffered a bigger drop in the ER, ER^C and LFPR, while young females experienced a bigger drop in the UR and a higher increase in the HRW. In general for the two periods, females increased both participation and employment to a larger extent than

males; especially adult females increased their ER. However, the increase in employment was not sufficient for females to reduce or curb the increase in the unemployment rate.

A high skill level had a positive impact on youth, and especially on young males. Higher skills seem to increase the incentive for youth to enter the labor market, increase the probability of finding employment and shield from unemployment during expansions. In addition, high skilled male youth performed better than their adult peers, but low skilled female adults did better than their young peers. High skilled adult males also did better than their low skilled peers, while the opposite was the case for females.

Summarizing the findings, youth have in general not been catching up on adults in the labor market during expansions. The LFPR, as well as the ER and ER^C, increased slightly more for youth than for adults in the first expansion, but significantly less in the last expansion. While unemployment was reduced less for youth than for adults, the wage increased the most for youth, and this may have reduced demand for this least experienced group, impacting the other indicators negatively. Thus, it appears that while wages of youth were catching up on adults' wages, it reduced the attractiveness of hiring youth. In conclusion, few indicators support that youth are catching up on adults during expansions. The support, in fact, leans more to the opposite, viz., youth benefit less from expansions than adults.

In conclusion for Section 4, Brazilian youth were harder hit by economic downturns than adults, but also they did not reap the benefits during positive fluctuations. During recessions youth lost ground in terms of labor force participation and employment, but in regard to wages and to some degree unemployment, they were better off than adults. However, the loss of employment may be directly linked to increased wages. During expansions, youth did not catch up on adults. In fact, youth generally lost ground in terms of all indicators apart from wages. Thus, relative wages moved opposite the other labor market indicators over most business cycles, and likely reduced demand for the less experienced workers.

5. Conclusion

The trend for youth compared to adults has been deterioration in most labor market measures between 1978 and 2002. The labor force participation rate is higher for adults than for youth, and the gap has increased. Likewise, the employment rate and the corrected employment rate have deteriorated in absolute and relative terms for youth compared to adults. While adults increased their employment rate, youth experienced a drop of 14 percent. The unemployment rate multiplied nearly four times for youth over the period covered; reaching 19.1 percent in 2002. Also, the adult unemployment rate increased substantially, but reached just 7.4 percent in 2002. In respect to hourly wages, adults received around two times what youth received, but in levels the gap decreased.

Females experienced a very distinct labor market pattern, but different skill groups were harder to distinguish. While females are not at par with males, they have

been catching up in terms of participation, employment, and wages, but unfortunately they have also experienced increasing unemployment. In this way the traditional gender pattern is changing, but the high unemployment rate for females testifies that there is still a way to go to achieve equality in the labor market. While urban areas are taking the lead in this change, rural areas are not left unaffected. The situation for different skill groups is not as distinct as might be expected. However, the situation and trend for high skilled workers tend to be better than for low skilled in most terms, yet wages have been falling more for the former group.

A break in the labor market occurred between the two decades in focus with the 1980s offering less dramatic changes. Labor market trends for the 1980s were fairly positive for both youth and adults in terms of participation and employment. However, the unemployment rate increased slowly with a significant gap between young and adult. Real wages were fairly stable over the decade, but adult females received lower wages than males. Yet, females were catching up on males, since wages for particularly urban males decreased.

The 1990s offered less conciliation for youth. Especially adult females drove up the LFPR, but for youth it fell because of a drop in the participation rate among low skilled males. Likewise, employment continued to rise for female adults, but dropped for all youth irrespective of skill level. The jobless growth in the 1990s was particularly hard on youth. Unemployment tripled with especially urban areas suffering, and the unemployment gap between youth and adults, and between females and males, increased. Wages decreased in general, but the age wage gap also decreased and the gender wage gap even reversed; now favoring females. While trends were generally bad for youth over the two decades, the labor market situation for youth deteriorated more rapidly in the 1990s than in the 1980s, and because youth did not catch up during expansions in spite of suffering more than adults during recessions.

Business cycle changes showed that Brazilian youth worked as a buffer absorbing negative business cycle fluctuations, but also they did not reap the benefits during positive economic fluctuations. In particular toward the end of the period, youth lost ground compared to adults in terms of labor force participation and employment during recessions, but in respect to changes in wages youth were better off. However, while the increase in relative wages benefited working youth, it may also have had a negative impact on employment. During expansions, youth did not catch up on adults. In fact, youth generally lost ground in terms of all indicators apart from wages. Thus, wages moved opposite the other labor market indicators during most business cycles.

Future research needs to address how lasting adverse impacts on youth are. For example, Raaum and Røed (2002) find that labor market conditions at the time and place of potential entry into the labor market, have substantial and persistent impact on labor market performance using micro data for Norway. Birth cohorts that face depressed labor markets when graduating from primary or secondary education are subject to relatively high unemployment rates during their entire career. Also, Oreopoulos et al. (2006), confirm a long-run negative impact on wages for young graduates entering the Canadian

labor market in a recession. Thus, if Brazilian youth experience the same long-lasting effects from unemployment, the current level of youth unemployment will affect the entire population negatively for many years to come.

Finally, wage rigidity has been hinted at a number of times in this paper, as a potential explanation for the deterioration in the labor market for youth in the latter part of the period covered. This hypothesis is explored in a forthcoming paper.

References

Arabsheibani, G. Reza; Carneiro, Francisco, and Henley, Andrew (2003) "*Gender Wage Differentials in Brazil: Trends over a Turbulent Era*". World Bank Policy Research Working Paper. No. 3148.

Birdsall, Nancy and Fox Louise (1985) "*Why Males Earn More: Location and Training of Brazilian Schoolteachers*". Economic Development and Cultural Change. Vol. 33, No 3, pp. 533-556.

Blom, Andreas; Holm-Nielsen, Lauritz and Verner, Dorte (2001) "*Education, Earnings, and Inequality in Brazil 1982−1998; Implications for Education Policy*". World Bank. Washington DC.

Cacciamali, Maria Cristina (2005) "*Mercado de Trabajo Juvenil: Argentina, Brasil y México*". International Labour Organization (ILO).

Carneiro, Francisco G. (2003) "*A Poverty Profile and Functional Aspects of Brazilian Labour Markets*". Economic Commission for Latin America and the Caribbean (ECLAC).

Cuadros, Waldir (2003) "*Classes Sociais e Desemprego no Brazil Dos Anos 1990*". Economia e Sociedade, Campinas, v. 12, n. 1 (20), pp. 109−135.

Duryea, Suzanne; Lam, David and Levison, Deborah (2001) "*Effects of Economic Shocks on Children's Employment and Schooling in Brazil*". Paper prepared for presentation at the General Conference of the International Union for the Scientific Study of Population. Salvador, Brazil.

Fares, Jean; Montenegro, Claudio and Orazem, Peter (2006) "*How are Youth Faring in the Labor Market? Evidence from Around the World*". World Bank Policy Research Working Paper. No. 4071.

Fawcett, Caroline (2003) "*Building a Bridge for the Road too Far – Policy Analysis for School to Work Transition in Latin America*". Paper prepared for Conference 'Youth Explosion in the Developing Countries' Woodrow Wilson Center, February 10th.

Ferreira, Francisco; Leite, Phillippe and Litchfield, Julie (2006) "*The Rise and Fall of Brazilian Inequality*". World Bank Policy Research Working Paper. No. 3867.

Gasparini, L; Haimovich, F; Busso, M. and Winkler, H. (2006) "*Employability in the Southern Cone*". Economic and Social Study Series Editors: M. Cabrol and J. Trias Inter-American Development Bank.

Hoek, Jasper (2006) "*Life Cycle Effects of Job Displacement in Brazil*". IZA Discussion Paper. No. 2291.

ILO (2007) "*Trabajo Decente y Juventud – América Latina*". International Labor Organization (ILO). Lima, Peru.

Jamillo, Miguel (2006) "*Youth at Risk in Latin America and the Caribbean – Supporting Youth Facing Labor Market Risks*". Policy note prepared for the World Bank. Washington DC.

Justesen, Michael and Verner, Dorte (2007) "*Factors Impacting Youth Development in Haiti*". World Bank Policy Research Paper. No. 4110.

Justesen, Michael and Verner, Dorte (2007) "*The Effect of Business Cycle Fluctuations on Argentina Youth*". World Bank Working Paper. Washington DC.

Lam, David (2006) "*The Demography of Youth in Developing Countries and its Economic Implications*". World Bank Policy Research Paper. No. 4022.

Llisterri, Juan; Kantis, H; Angelelli, P, and Tejerina, L (2006) "*Is Youth Entrepreneurship A Necessity or An Opportunity? A First Exploration of Household and New Enterprise Surveys in Latin America*". Inter-American Development Bank Sustainable Development Department Technical Papers Series.

Marshall, Andriana (2004) "*Labour market policies and regulations in Argentina, Brazil and Mexico: Programmes and impacts*". Employment Strategy Paper. Prepared for ILO's project on Employment Challenges in Argentina, Brazil and Mexico.

Neri, Marcelo C. and Thomas, Mark R. (2000a) "*Household Responses to Labor-Market Shocks in Brazil, 1982−99*". World Bank. Washington DC.

Neri, Marcelo C. and Thomas, Mark R. (2000b) "*Macro Shocks and Microeconomic Instability: An Episodic Analysis of Booms and Recessions*". Economics Working Papers. No 391. Graduate School of Economics, Getulio Vargas Foundation (Brazil).

O'Higgins, Niall (2003) "*Trends in the Youth Labour Market in Developing and Transition Countries*". World Bank Social Protection Discussion Paper. No. 0321.

Oreopoulos, Phil, von Wachter, Till and Heisz, Andrew (2006) "*The Short- and Long – Term Career Effects of Graduating in a Recession: Hysteresis and Heterogeneity in the Market for College Graduates*". NBER Working Paper. No. W12159.

Puerto, Olga Susana (forthcoming) "*Interventions to Support Young Workers in Latin America and the Caribbean: Regional Report for the Youth Employment Inventory*". World Bank Social Protection Discussion Paper.

Raaum, Oddbjoern and Røed, Knut (2002) "*Do Business Cycle Conditions at the Time of Labour Market Entry Affect Future Unemployment*". Memorandum. No. 12. Department of Economics. University of Oslo.

Ryan, Paul (2006) "*Youth at Risk in Developed Economies: Unemployment, Inactivity and Joblessness*". Policy Note Prepared for the World Bank. Washington DC

Zylberstajn, Helio and de Souza, Amaury (1994) "*Structural Adjustment and the Labour Market in Brazil*". Discussion Paper Series. No. 75. ILO. Geneva.

World Bank (forthcoming) "*Youth at Risk in Latin America*". World Bank. Washington DC.

World Bank (2007a) "*Youth at Risk in Brazil*". Volume I: Policy Briefing. Washington DC.

World Bank (2007b) "*Youth at Risk in Brazil*". Volume II: Technical Report. Washington DC.

World Bank (2007c) "*Development and the Next Generation*" World Development Report. Washington DC.

World Bank (2004) "*Inequality and Economic Development in Brazil*". A World Bank Country Study. Washington DC.

World Bank (2002a) "*Brazil Jobs Report*". Volume I: Policy Briefing. Washington DC.

World Bank (2002b) "*Brazil Jobs Report*". Volume II: Background Papers. Washington DC.

Appendix A

The five business cycles analyzed here are identified by Neri and Thomas (2002b).

The three periods of economic recession are:

- *The Latin American Debt Crisis (1981−1983)*
  The first debt crisis combined with impacts from the second world wide oil shock was one of the most severe economic contractions since 1929 with negative GDP growth for the period. The external shock combined with tight monetary policy and trade restrictions, introduced to curb inflation and cut the trade deficit, led to a deep recession. Imports fell, but inflation persisted. Employment in manufacturing and construction fell, while the informal labor market expanded (Zylberstajn and de Souza 1994).

- *The Collor Plan (1990−1992)*
  The Collor plan combined structural reforms with stabilization policies. Prices were frozen, the exchange rate fixed, and trade was liberalized. With the government's move to halt inflation by monetary contraction the economy moved into recession and poverty increased markedly.

- *The Asian Crisis and The Real Devaluation (1996−1999)*
  The Asian financial crisis put new pressure on the real. This pressure grew with the Russian default, and the crawling peg was finally abandoned in January 1999. The real weakened in the last half of 1999, because the trade deficit remained.

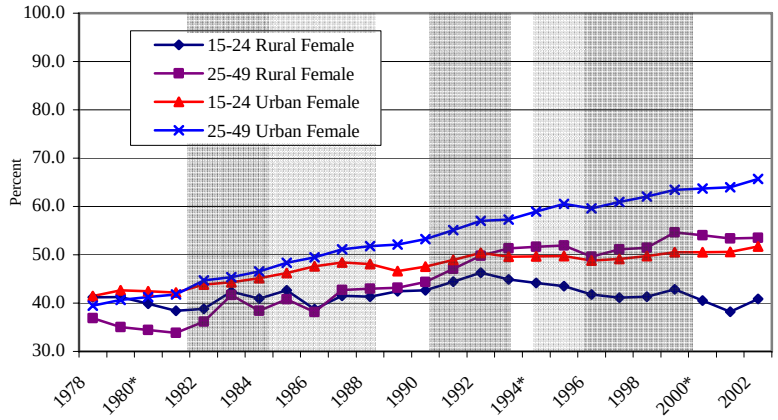
The two periods of economic expansion are:

- *The Recovery After the Debt Crisis and The Cruzado Plan Boom (1984−1987)*
  Public spending was cut, and the currency devalued in 1983. The recovery was export led, and unemployment and poverty fell. By 1985 price controls substituted strict fiscal and monetary policies, but these did not last and inflation returned. In spite of recovery, the informal market continued to grow rapidly.
  Inflation decreased with the introduction of the cruzado in March 1986. Stabilization after the recession was achieved by expansionary fiscal and monetary policy combined with an unsustainable consumption led growth. Trade deficits eventually forced the fixed exchange rate to be abandoned, and repeated periods of hyperinflations occurred.

- *The Real Boom (1994−1995)*
  The 1994 plan introduced the new currency with a more credible crawling dollar peg. A period of capital inflow and consumption led expansion followed during which imports increased. With the tequila crisis capital flows wavered, and the trade deficit increased. The monetary policy was kept tight, and the dollar peg maintained. Toward the end of the period the minimum real wage started increasing.

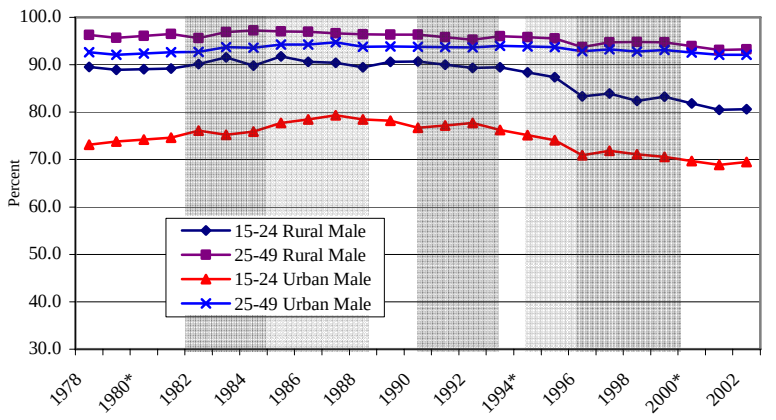
Appendix B

Figure B.1: Rural/Urban Female Labor Force Participation Rate in Brazil (1978−2002)



Source: Own calculations on PNAD

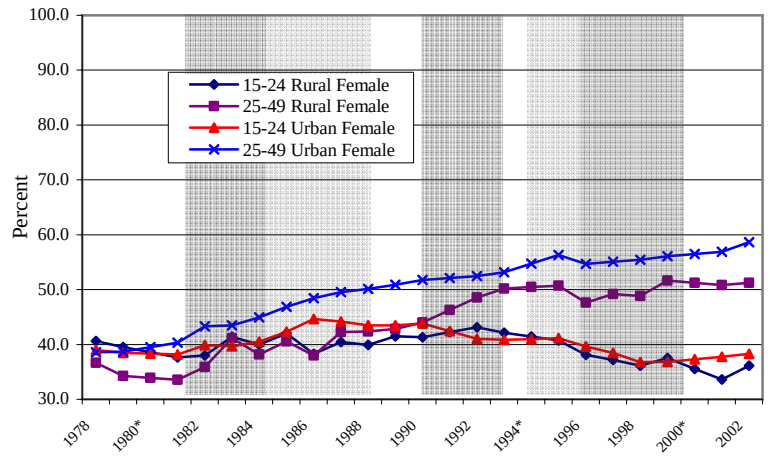
Figure B.2: Rural/Urban Male Labor Force Participation Rate in Brazil (1978−2002)



Source: Own calculations on PNAD

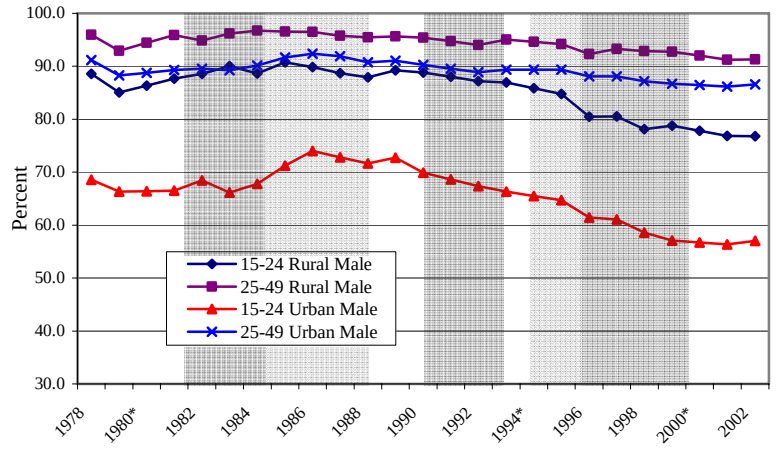
Appendix C

Figure C.1: Rural/Urban Female Employment Rate in Brazil (1978−2002)



Source: Own calculations on PNAD

Figure C.2: Rural/Urban Male Employment Rate in Brazil (1978−2002)



Source: Own calculations on PNAD

Appendix D

Figure D.1: Distribution of Female Wage Workers by Skill Level, Brazil 1978–2002

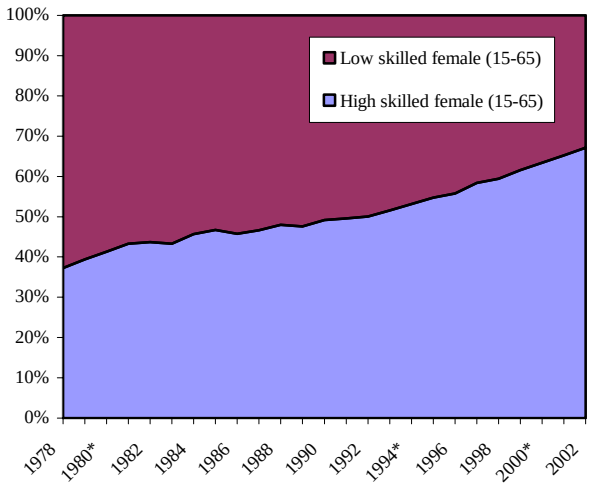
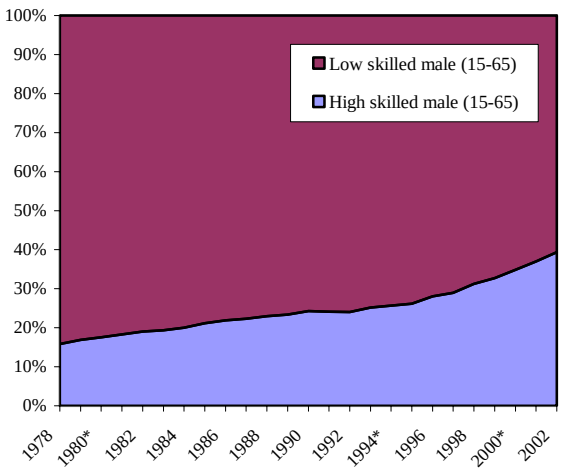


Figure D.2: Distribution of Male Wage Workers by Skill Level, Brazil 1978–2002



Appendix E

Figure E.1: Rural/Urban Female Hourly Real Wage in Brazil (1978−2002)

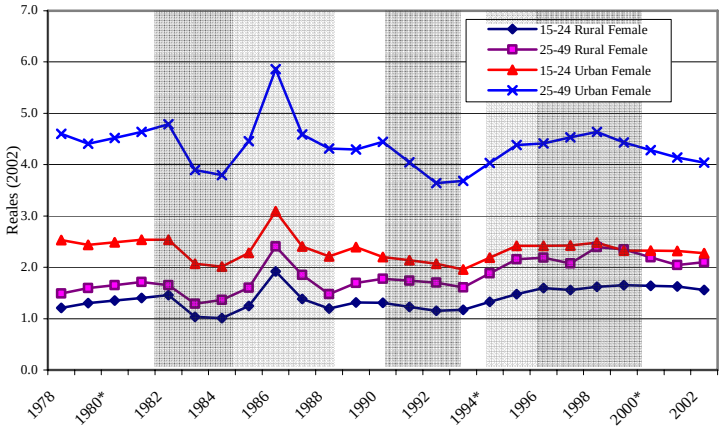
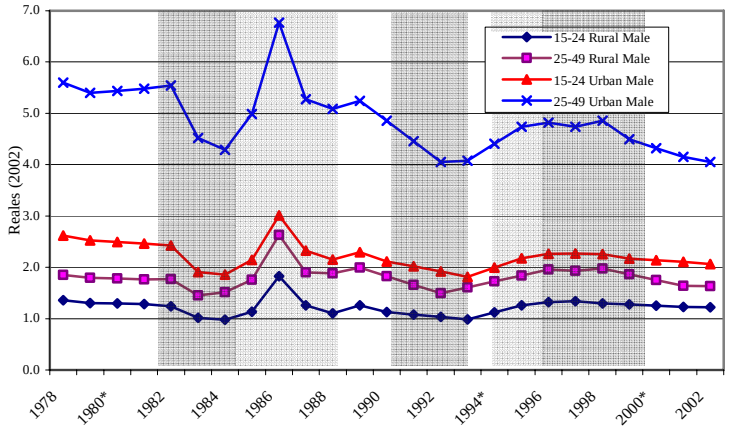


Figure E.2: Rural/Urban Male Hourly Real Wages in Brazil (1978−2002)



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Summary Findings

Brazilian youth today face enormous difficulties in penetrating the labor market, a situation much different from the one 25 years ago. While females have entered the labor market and increased their employment rate many are unemployed. Youth unemployment reached 19.1 percent in 2002; up from 4.5 percent in 1978. This paper analyzes long-run trends, as well as the impact of business cycles, on Brazilian youth in the labor market. To do this, the paper uses Brazilian household data (PNAD) spanning 1978–2002 and covering 290,000–530,000 individuals per year. Two main findings are presented: First, the labor market situation for youth has deteriorated and did especially so in the 1990s. In particular, labor force participation and employment have been decreasing relatively more for youth than for adults, but also wages decreased and unemployment increased for youth. Second, Brazilian youth were adversely impacted by business cycle fluctuations. During recessions youth lost ground compared to adults in the labor market in terms of labor force participation, employment, and to some extent unemployment. During expansions youth did not catch up on adults; in fact, the gap continued to widen.

HUMAN DEVELOPMENT NETWORK